

(No Model.)

E. LAVENS.
ELECTRIC ARC LAMP.

No. 585,318.

Patented June 29, 1897.

FIG. 1.

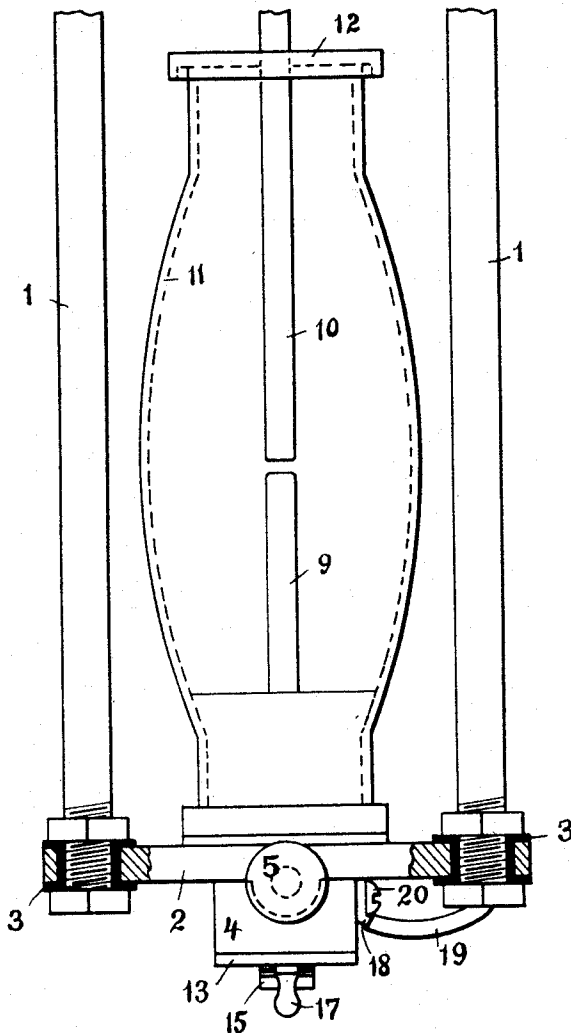


FIG. 4.

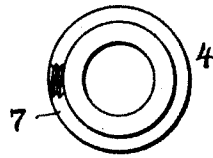


FIG. 5.



FIG. 3.

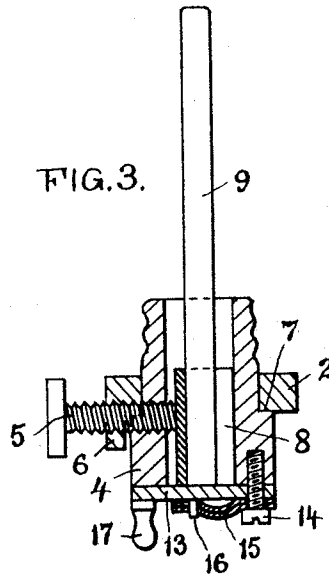
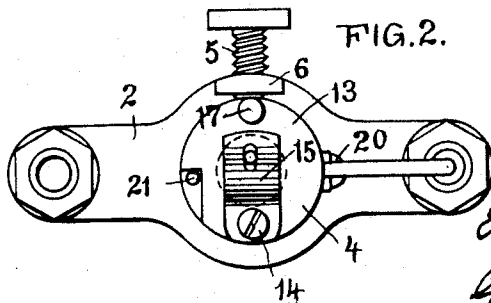


FIG. 2.



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ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 585,318, dated June 29, 1897.

Application filed March 20, 1897. Serial No. 628,394. (No model.)

To all whom it may concern:

Be it known that I, ERWIN LAVENS, a citizen of the United States, residing at Brooklyn, State of New York, have invented new and
5 useful Improvements in Arc-Lamps, of which the following is a specification.

My invention relates to electric-arc lamps, and is more especially designed as an improvement in that class of electric-arc lamps
10 in which the voltaic arc existing between the carbons is inclosed in a practically air-tight globe, known as the "inclosed" arc type of lamp.

The general arrangement of my improved
15 lamp conforms to that shown and described in the pending application, filed November 9, 1896, by Philip H. Klein and myself as joint inventors, Serial No. 611,544.

The special form of lamp herein described
20 and claimed is designed to be employed without the use of the large outer globe in cases where such lamp is used for interior illumination.

My invention therefore consists in a neat
25 and simple apparatus for holding and supporting the lower-carbon holder, together with the small inner globe inclosing the arc, and means permitting access to and removal of said lower carbon which may be simply
30 and quickly operated, but which at the same time when in closed position will effect a practically air-tight closure for the lower end of said carbon-holder, and consequently of the inclosing globe.

35 The preferred form of my apparatus is illustrated in the accompanying sheet of drawings, in which—

Figure 1 is a side view of the lower portion of the lamp-frame, broken away in part. Fig.
40 2 is a bottom view of the same. Fig. 3 is a longitudinal section of the carbon-holder and carbon-clamp, showing the lower carbon in position and the carbon-holder seated in the lower cross-bar of the lamp-frame. Fig. 4 is
45 a detail plan view of the carbon-holder, and Fig. 5 a similar view of the carbon-clamp.

Throughout the drawings like reference-figures refer to like parts.

1 1 represent the two vertical side rods of
50 the lamp-frame.

2 is the lower cross-bar of the lamp-frame, which is insulated from the side rods by the thimbles or washers of insulating material shown in Fig. 1 and marked 3 3.

The lower-carbon holder is marked 4 and
55 has a vertically-bored-out opening for the reception of the lower carbon.

5 is a set-screw threaded into or passing through one side of the carbon-holder and also passing through or threaded into a de-
60 pending lug 6 on one side of the cross-bar 2.

The carbon-holder 4 has an annular shoulder 7, which bears against the under side of the cross-bar 2 when the carbon-holder is
65 seated in its position therein, and which brings the opening in the side of the carbon-holder in line with the opening or perforation in the lug 6 on said cross-bar.

8 represents a carbon-clamp which I have shown in its preferable form of a split ring
70 having a portion opposite to said split portion flattened down or cut away so as to serve the double purpose of weakening the ring at that point, so as to give it the necessary springi-
75 ness and of affording ample bearing-surface for the end of the set-screw 5.

9 represents the lower carbon, 10 the upper carbon, and 12 any suitable cover, which rests on the upper end of the inclosing globe
80 11 and through which the upper carbon passes.

13 is a sliding cover which is pivoted to the lower end of the carbon-holder by the screw 14 or other suitable form of pivot, on which it turns horizontally to open or close
85 the lower end of said carbon-holder.

15 is any suitable form of spring, which I have shown as a plate-spring having two leaves, which is also mounted on the same pivot 14, presses up against the under side of the sliding cover 13, and is prevented from
90 moving laterally thereon by means of the pin 16, which passes through a slot in the outer end of said spring.

A handle 17, of any convenient form, mounted on the sliding cover 13, enables the operator to slide it in either direction to open or
95 close the lower end of the carbon-holder.

21 is a stop against which the sliding cover strikes when it is in position of closure to prevent it going beyond said position.
100

18 represents a wire for conducting current to the lower-carbon holder and through it to the lower carbon. Said wire has an insulating covering 19, and is preferably led down through one of the hollow side rods 1 of the lamp-frame. Connection to the lower-carbon holder is made by the binding-screw 20 or other convenient means.

The operation of my invention is evident from the above description.

By turning the sliding cover for the lower-carbon holder to the right (looking at Fig. 2) access may be had to the interior bored-out portion of said carbon-holder for inserting, removing, or adjusting the lower carbon and its clamp. The spring 15 holds the sliding cover snugly against the lower end of the carbon-holder, so as to form a practically airtight joint therewith, and as said spring turns with the cover it cannot get out of adjustment. The set-screw 5 serves the double purpose of holding the carbon-holder in position in the cross-bar and affording a means for applying pressure to the carbon-clamp 8. This pressure being applied to the flat side of the carbon-clamp forces its round side against the side of the carbon-holder, which has nearly the same radius of curvature, and consequently forces the split portions of said clamp together, thus causing them to close on the carbon which they encircle. No complicated, costly, and uncertain insulation in or about the carbon holder and clamp is needed, as the whole apparatus, including the cross-bar 2, is insulated from the lamp-frame. The connecting-wire 18 being flexible the entire carbon-carrier may be removed from the cross-bar without destroying such connection.

Various changes could be made in the details of construction without departing from the broad principles of my invention. A different form of carbon-clamp might be employed or the clamp might be omitted entirely and the set-screw 5 be allowed to press directly upon the carbon, although this would tend to destroy the carbon. As shown, both the opening through the lug 6 and the side of the carbon-holder have threads cut therein, with which the similar thread on the set-screw 5 engages, but if either of these threads should be dispensed with the other would serve all necessary functions. The shape of the sliding cover 13, of its handle, and of the spring 15 might be varied so long as their relative arrangement was preserved, &c.

Having therefore described my invention, what I claim as new, and desire to protect by Letters Patent, is—

1. In an inclosed electric-arc lamp, the combination of the lower-carbon holder which has a vertically-bored-out portion for reception of the carbon, the sliding pivoted cover for the lower end of said carbon-holder, and means for pressing said sliding cover against the bot-

tom of the carbon-holder to secure an airtight covering therefor, substantially as described.

2. In an inclosed electric-arc lamp, the combination of the lower-carbon holder which has a vertically-bored-out portion for reception of the carbon, the sliding pivoted cover for the lower end of said carbon-holder, a plate-spring mounted on the pivot for said cover which spring extends beneath and presses up against the under side of said cover, substantially as described.

3. In an inclosed electric-arc lamp, the combination of the lower-carbon holder which has a vertically-bored-out portion for reception of the carbon, the sliding pivoted cover for the lower end of said carbon-holder, a plate-spring mounted on the pivot for said cover, which spring extends beneath and presses up against the under side of said cover, together with a pin projecting from the under side of said cover through a slot in the outer end of the spring for preventing lateral displacement of said spring, substantially as described.

4. In an electric-arc lamp the combination of the cross-bar insulated from the lamp-frame, and having a depending lug on one side with a screw-threaded opening there-through, a lower-carbon holder, in the form of a hollow cylinder, seated in said cross-bar and having an opening through one side which registers with the opening in the above-described lug, and the set-screw which passes through both said openings, substantially as described.

5. In an electric-arc lamp the combination of the cross-bar insulated from the lamp-frame, and having a depending lug on one side with a screw-threaded opening there-through, a lower-carbon holder, in the form of a hollow cylinder, seated in said cross-bar and having an opening through one side which registers with the opening in the above-described lug, and the set-screw which passes through both said openings, together with the carbon-clamp located in said carbon-holder in line with said set-screw, substantially as described.

6. In an electric-arc lamp the combination of the cross-bar which has a depending lug on one side with a screw-threaded opening there-through, a carbon-holder seated in said cross-bar, having a vertical cylindrical opening for admission of the carbon therein, and a horizontal screw-threaded opening in one side, which registers with the opening in the above-described lug, the split ring for a carbon-clamp located in said holder in line with the screw-threaded opening, and the set-screw which screws into the threaded openings in lug and carbon-holder, and presses against the carbon-clamp, substantially as described.

7. In an electric-arc lamp the combination of the carbon-clamp, the carbon-holder in

which the clamp is inclosed, said holder having an opening in one side in line with the clamp, the cross-bar of the lamp-frame in which the carbon-holder is seated and which
5 has a depending lug on one side provided with an opening which registers with the opening in the side of the carbon-holder, and the set-screw which passes through said openings, meshing with screw-threads in one or more of

them, and presses against the carbon-clamp, so substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

ERWIN LAVENS.

Witnesses:

W. H. FOSTER,
WM. FRANKSEN.